MICROFILMING COSTS

The most practical way to microfilm voluminous inactive records having physical characteristics of the bulk of those in the Records Center would be to use 16mm rotary cameras at a reduction ratio of 24 to 1. The rotary camera would be hand fed for those files made up of mixed sizes, colors and weights of papers. Files of uniform papers would be automatically fed by using a motorized feeding mechanism attached to the rotary camera.

Hand feeding would produce 10,000 filmed pages per day per camera. Automatic feeding would average close to 30,000 pages per day. I would guess that a combination of the two modes of feeding would produce an average of 15,000 pages per camera day. Although this is not a wild guess, a more precise estimate would require a reexamination of the records on my part.

Basing the average filming speed at 15,000 pages per camera day, the following costs would result:

- 50,000 cu. ft. @ 2,000 pages per = 100,000,000 pages
- 1 reel (100 ft.) 16mm film at 24x = 3,000 pages
- 100,000,000 pages ÷ 3,000 = 33,333 reels
- 100,000,000 pages ÷ 15,000 = 6,666 camera days
- 6,666 camera days = 6,666 operator days
- 33,333 reels @ $4.21 per incl. developing = $140,330
- 6,666 camera days @ $4 rental per = $26,665
- 6,666 operator days (GS 4.3) @ $20.16 per = $134,400

(For each operator day 1/3 day would be required to condition papers for filming, i.e. remove fasteners and prepare "targets" to replace identifying data carried on file dividers, folder tabs, box labels, etc. Thus 2,222 man days for conditioning would be required.)

- 2,222 conditioning days @ $20.16 per = $44,800

(For each camera day 1/10 day would be required to inspect film, splice retakes and label cartons. This would total 667 man days.)

- 667 inspecting days @ $20.16 = $13,440
- 667 film reader equipment days rental @ $1.50 = $1,000

Total all costs this sheet ..... $ 360,635

In order to forecast additional costs more accurately it must be determined how long the microfilming of 100,000,000 pages should take in terms of months or years. I would think that a time period of 2 to 3 years would be most satisfactory. Less time would require larger numbers of people and equipment items and therefore more working space. A longer period would not keep far enough ahead of new deposits and no doubt would cost much more due to the inexorable rising of costs.

For the sake of costing let's decide on 30 months to complete the filming of 50,000 cu. ft. of records.

- 30 months = 600 working days (realistic)
- 6,666 camera days ÷ 600 = 11 cameras
- 11 cameras = 11 operators
- 11 cameras = 4 conditioners
- 11 cameras = 1 inspector

For the above force of people there should be:

- 1 Supr.-in-charge...GS12.3 for 30 months	=	$29,210
- 1 Asst. supervisor...GS9.3 for 30 months	=	$20,545
- 1 Camera supervisor...GS7.3 for 30 mos.	=	$17,193
- 1 Conditioning supr...GS7.3 for 30 mos.	=	$17,193
- 1 Laborer...equiv. GS3.3 for 30 mos.	=	$11,392
Total salary supr. & labor	=	$95,533
Total from preceding sheet	=	$360,635
*GRAND TOTAL COSTS		$ 456,168

Space requirements would average out at the same per person allowance as for clericals, i.e. 40 sq. ft. x 21 = 840 sq. ft.

GRAND TOTAL SPACE	840 SQ. FT.
GRAND TOTAL PEOPLE	21

* Does not include hiring costs, training costs, fringe benefits, space costs, secretarial assistance, management overhead, etc.

The cost figures shown do not include certain overhead costs and they are based on near optimum conditions. A 10% adjustment for unforseen slippage added to the overhead costs would up the total costs to as much as $525,000. Slippage could result from operator ineptness or machine malfunctioning.

From past costing experiences with private contractors, I do not feel that the Agency could obtain a bid from an acceptable contractor for less than $12.50 per thousand pages or $1,250,000 for the contemplated quantity of 100,000,000 pages. Because of the scarcity of good help, I further feel that a contractor would require at least 18 months to complete this job. It would be particularly difficult for a contractor to recruit people that could meet both aptitude and security requirements and yet be willing to work for a comparatively modest wage.

The kind or mode of microfilming I have recommended is by far the least expensive. The film is wound in 100 ft. lengths on plain reels that would be threaded onto reading devices. The reader could or could not have hard copy printing capability. Records Center personnel could, if desired, service requests for material so filmed at a rate of 5 to 10 minutes per request depending on the need for photo copying or hand abstracting. Obviously, reference costs would be a lot less if the less active files were selected for microfilming.

The same microfilm described above could be placed into film cartridges that would facilitate mounting on the film reader and would improve search efficiency. These cartridges cost about $1 each and accomodate 100 ft. lengths of film.

Any form of microfilming in which a flat bed camera is used would increase overall costs by at least 100% and is therefore not recommended for seldom used record storage.

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Remarks:

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Attached is a brief analysis of the $525,000 cost on a project to film 50,000 cubic feet of records if the Agency runs the Project or $1,250,000 for a contractor.

These estimates are for a most economical but useful microfilm because the subject matter is inactive records of limited reference activity Higher quality requirements will increase the cost considerably.

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